

## CLAIMS

What is claimed is:

1. A drum washing machine, comprising:  
a water tub;  
a rotary tub rotatably provided in the water tub;  
a detergent feed pipe having a first end connected to the water tub and a second end disposed at an inlet of the rotary tub; and  
a detergent feed unit to feed a detergent contained in the water tub into the rotary tub through the detergent feed pipe;  
wherein the detergent feed unit dissolves the detergent before feeding the detergent into the rotary tub in response to the detergent being a powdered detergent.
2. The drum washing machine according to claim 1, wherein the detergent feed unit comprises a pump provided at the detergent feed pipe.
3. The drum washing machine according to claim 1, further comprising a spray nozzle provided at the second end of the detergent feed pipe to spray the detergent into the rotary tub.
4. The drum washing machine according to claim 1, further comprising a detergent dissolution space formed at the detergent feed pipe to temporarily store the detergent.
5. The drum washing machine according to claim 2, wherein the detergent feed unit comprises a control unit to drive the pump to dissolve the powdered detergent and then feed the dissolved powdered detergent into the rotary tub.
6. The drum washing machine according to claim 5, further comprising:  
a detergent dissolution space formed at the detergent feed pipe to temporarily store the detergent; and  
a water feed valve;  
wherein the control unit opens the water feed valve to feed a set amount of water into the water tub after the powdered detergent is moved into the detergent dissolution space.

7. The drum washing machine according to claim 6, further comprising a motor to rotate the rotary tub in opposite directions, wherein the control unit controls the motor to rotate the rotary tub after feeding the set amount of water into the water tub.

8. The drum washing machine according to claim 7, wherein the control unit repeatedly turns the pump on and off to move the powdered detergent back and forth from the water tub to the detergent dissolution space to dissolve the powdered detergent.

9. The drum washing machine according to claim 5, wherein the control unit drives the pump to reciprocate the detergent contained in the water tub between an inside of the water tub and the detergent feed pipe to dissolve the powdered detergent.

10. The drum washing machine according to claim 5, further comprising a key input unit having a powdered detergent button, the control unit determining whether the detergent contained in a lower portion of the water tub is the powdered detergent according to the powdered detergent button being selected in the key input unit.

11. The drum washing machine according to claim 10, wherein the key input unit further comprises a liquid detergent button by which the control unit determines the detergent contained in the lower portion of the water tub is a liquid detergent.

12. The drum washing machine according to claim 5, wherein the control unit drives the pump to clean the detergent feed pipe in response to the detergent contained in the water tub being the powdered detergent.

13. A method of controlling a drum washing machine, the drum washing machine having a detergent feed pipe provided with a first end connected to a water tub and a second end disposed at an inlet of a rotary tub, the control method comprising:

feeding a liquid detergent into the rotary tub from the water tub through the detergent feed pipe in response to a detergent contained in the water tub being the liquid detergent; and

dissolving a powdered detergent before feeding the dissolved detergent into the rotary tub from the water tub through the detergent feed pipe in response to the detergent contained in the water tub being the powdered detergent.

14. The drum washing machine control method according to claim 13, further comprising determining whether the detergent contained in the water tub is the powdered detergent or the liquid detergent according to a powdered detergent button or a liquid detergent button selected by a user.

15. The drum washing machine control method according to claim 13, wherein the dissolving and feeding of the powdered detergent and the feeding of the liquid detergent comprise driving a pump provided at the detergent feed pipe.

16. The drum washing machine control method according to claim 15, wherein the dissolving of the powdered detergent comprises reciprocating the powdered detergent contained in the water tub between an inside of the water tub and the detergent feed pipe.

17. The drum washing machine control method according to claim 16, further comprising driving the pump to clean the detergent feed pipe after dissolving and feeding the powdered detergent.

18. The drum washing machine control method according to claim 16, further comprising rotating the rotary drum during the dissolving of the powdered detergent.

19. A drum washing machine, comprising:  
a water tub;  
a rotary tub provided in the water tub; and  
a detergent feed unit to feed a detergent contained in the water tub into the rotary tub;  
wherein the detergent feed unit dissolves the detergent before feeding the detergent into the rotary tub in response to the detergent being a powdered detergent.

20. The drum washing machine according to claim 19, wherein the detergent feed unit feeds the detergent contained in the water tub to the rotary tub without dissolving the detergent in response to the detergent being a liquid detergent.

21. The drum washing machine according to claim 19, further comprising a pump to reciprocate the powdered detergent in and out of the water tub to dissolve the powdered detergent.

22. A method of controlling a drum washing machine, comprising:  
feeding a detergent contained in a water tub into a rotary tub through a detergent feed pipe; and  
dissolving the detergent before the feeding into the rotary tub in response to the detergent being a powdered detergent.

23. A drum washing machine, comprising:  
a water tub;  
a rotary tub; and  
a spraying unit;  
wherein a powdered detergent contained in the water tub is dissolved and then sprayed into the rotary tub by the spraying unit to soak a center of a laundry load.

24. A drum washing machine, comprising:  
a water tub;  
a rotary tub provided in the water tub; and  
a detergent feed unit;  
wherein a first type of detergent is dissolved in the detergent feed unit before being fed from the water tub to the rotary tub, and a second type of detergent is fed from the water tub to the rotary tub without being dissolved in the detergent feed unit.